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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,269	04/05/2005	William A Steer	GB 020172	4629
24737 7590 09/12/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER CHOWDHURY, AFROZA Y	
			ART UNIT	PAPER NUMBER
			2629	
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			09/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,269

Applicant(s)

STEER, WILLIAM A

Examiner

Afroza Y. Chowdhury

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/15/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **"feedback system is provided between the current-measurement supply line (34) and the control line (6)"** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

3. Claims 5-11 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 3. See MPEP § 608.01(n). Accordingly, the claims 5-11 are not been further treated on the merits.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pae et al. (EP1221686).

As to claim 1, Pae et al. discloses a driving circuit in an active matrix electroluminescent display device comprising:

an electroluminescent (EL) display element (fig. 2(OEL)) and
a drive transistor (fig. 2(P0)) for driving a current (col. 5, [0035], lines 17-21)
through the display element (fig. 2(OEL));

a first switch (fig. 2(P1)) switches an externally supplied control voltage (col. 5, [0034]),

a second switch (fig. 2(P3)) for routing current (fig. 2, 3, col. 5, [0040]) from a current-measurement supply line (fig. 2, 3(Iref)) to the display element (fig. 2(OEL)),

the first and second switches (fig. 2(P1, P3)) being operated in complementary manner (col. 6, [0044]); and

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a control line (fig. 2(data line)) for controlling the gate voltage applied to the drive transistor (fig. 2(P0)),

wherein a feedback system (fig. 3, col. 5, [0035], [0040]) is provided between the current-measurement supply line (fig. 2, 3(Iref)) and the control line (fig. 2(data line)).

Pae et al. does not explicitly mention that an active matrix EL display comprising an array of display pixels.

However, it is obvious for an EL display device to have an array of display pixels in order to display images.

Pae et al. also does not teach a first switch enabling power from a power supply line to be supplied to the display element.

However, it would be an obvious design choice to use a first switch for enabling the power from a power supply line so that the storage capacitor can hold fixed gate source voltage.

As to claim 2, Pae et al. teaches a device where the feedback system (fig. 3, col. 5, [0035]) enables a gate voltage to be determined corresponding to a desired current flow through the drive transistor (fig. 2(P0)).

As to claim 3, Pae et al. teaches a device wherein the feedback system (fig. 3, col. 5, [0035]) is provided in a column driver (fig. 2, 3(ramp)) of the display device.

As to claim 12, Pae et al. discloses a method of addressing an active matrix electroluminescent display device comprising,

in which each pixel comprises an electroluminescent (EL) display element (fig. 2(OEL)) and

a drive transistor (fig. 2(P0)) for driving a current (col. 5, [0035], lines 17-21) through the display element (fig. 2(OEL)),

the method comprising, for each pixel: applying a voltage (col. 5, [0035], lines 17-21) to the drive transistor (fig. 2(P0)) to drive a current through the display element (fig. 2(OEL)),

the current being drawn (fig. 2, 3, col. 5, [0040]) from a current-measurement supply line (fig. 2, 3(Iref));

processing the current using feedback control circuitry (fig. 3, col. 5, [0035], [0040]) outside the array of pixels (fig. 3) and having an input representing the desired current (fig. 2, 3(ramp), col. 5,[0040] – col. 6, [0041]);

generating a control voltage (col. 5, [0034], [0040]) in the feedback control circuitry (fig. 3, col. 5, [0035], [0040]) for the drive transistor (fig. 2(P0)) using the processed current (fig. 2, 3(ramp), col. 5,[0040] – col. 6, [0041]),

thereby implementing a feedback control loop (fig. 2, 3, col. 5, [0035], [0040]) which reaches equilibrium [0041] when the current corresponds to the desired current, and

supplying the control voltage (col. 5, [0034], [0040]) to the pixel; within the pixel, storing a voltage (col. 5, [0034]) derived from the control voltage (col. 5, [0040]); and

applying the stored voltage (fig. 2, col. 5, [0034]) to the gate of the drive transistor (fig. 2(P0)) and

drawing current from a power supply line (fig. 2(VDD), col. 5, [0034]) to illuminate the display element (fig. 2(OEL)).

Pae et al. does not explicitly mention that an active matrix EL display comprising an array of display pixels.

However, it is obvious for an EL display device to have an array of display pixels in order to display images.

As to claim 13, Pae et al. discloses a method wherein a processing the current comprises converting the current into a voltage (fig. 3, col. 6, [0045]), and comparing the voltage (fig. 3, col. 6, [0045]) with an input voltage representing the desired current to produce an amplified differential output (col. 6, [0042]).

As to claim 14, Pae et al. teaches a method where the control voltage comprises the amplified differential output (col. 6, [0042]).

As to claim 15, Pae et al. teaches a method wherein current is drawn from the power supply line through a first switch (fig. 2(P1)) and

current is drawn from the current-measurement supply line (fig. 2, 3(Iref)) through a second switch (fig. 2(P3)),

the first and second switches (fig. 2(P1, P3)) being operated in complimentary manner (col. 6, [0044]),

the first switch (fig. 2(P1)) being used after an initial pixel programming phase (fig. 2,3, col. 5. [0034]) and

the second switch (fig. 2(P3)) being used during the initial pixel programming phase (fig. 3, col. 5, [0036], [0040], enabling lout to maintain ramp voltage to the data line).

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pae et al. (EP1221686) in view of Applicant Admitted Prior Art (here in after AAPA).

As to claim 4, Pae et al. teaches a device where each pixel further comprises a storage capacitor (fig. 2(Cs)) for storing a control voltage (col. 5, [0034]).

Pae et al. does not explicitly teach a storage capacitor for storing a gate-source voltage.

AAPA teaches a storage capacitor (fig. 2(24)) for storing a gate-source voltage (description, 8th paragraph) of the drive transistor (fig. 2(22)).

Therefore, it would be obvious to one skill in the art at the time of the invention was made to combine AAPA's electroluminescent (EL) display with the active matrix display of Pae et al. to make a driving circuit in an EL display device with a storage capacitor that holds gate-source voltage in order to provide desired current source operation of a pixel.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Afroza Y. Chowdhury whose telephone number is 571-270-1543. The examiner can normally be reached on 7:30-5:00 EST, 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC

8/30/2007


AMARE MENGISTU
SUPERVISORY PATENT EXAMINER